**DC:**

# Care & Use Multimeter

**Unclassified:**

**2 Hour Conference, W/ 2Hr. P/E1**

**Safety & Environmental Impact; “LOW”.**

# Terminal Learning Objective

**ACTION:**

**Measure DC and AC voltage, DC and AC current, and resistance using a digital Multimeter.**

**CONDITION:**

**Given a classroom environment, Computer Aided Instruction (CAI) workstation, NIDA 130A electronic trainer, digital Multimeter w/test leads, PC-130-1B, PC-130-2, PC-130-3, and PC-130-4 circuit cards, and official OMEMS reference materials.**

**STANDARD:**

**Be able to operate a digital Multimeter and properly measure DC & AC voltage, DC & AC current, and resistance using a digital Multimeter to the established standard 7 correct answers out of 10 & 8 out of 10 for EOD.**

# Introduction

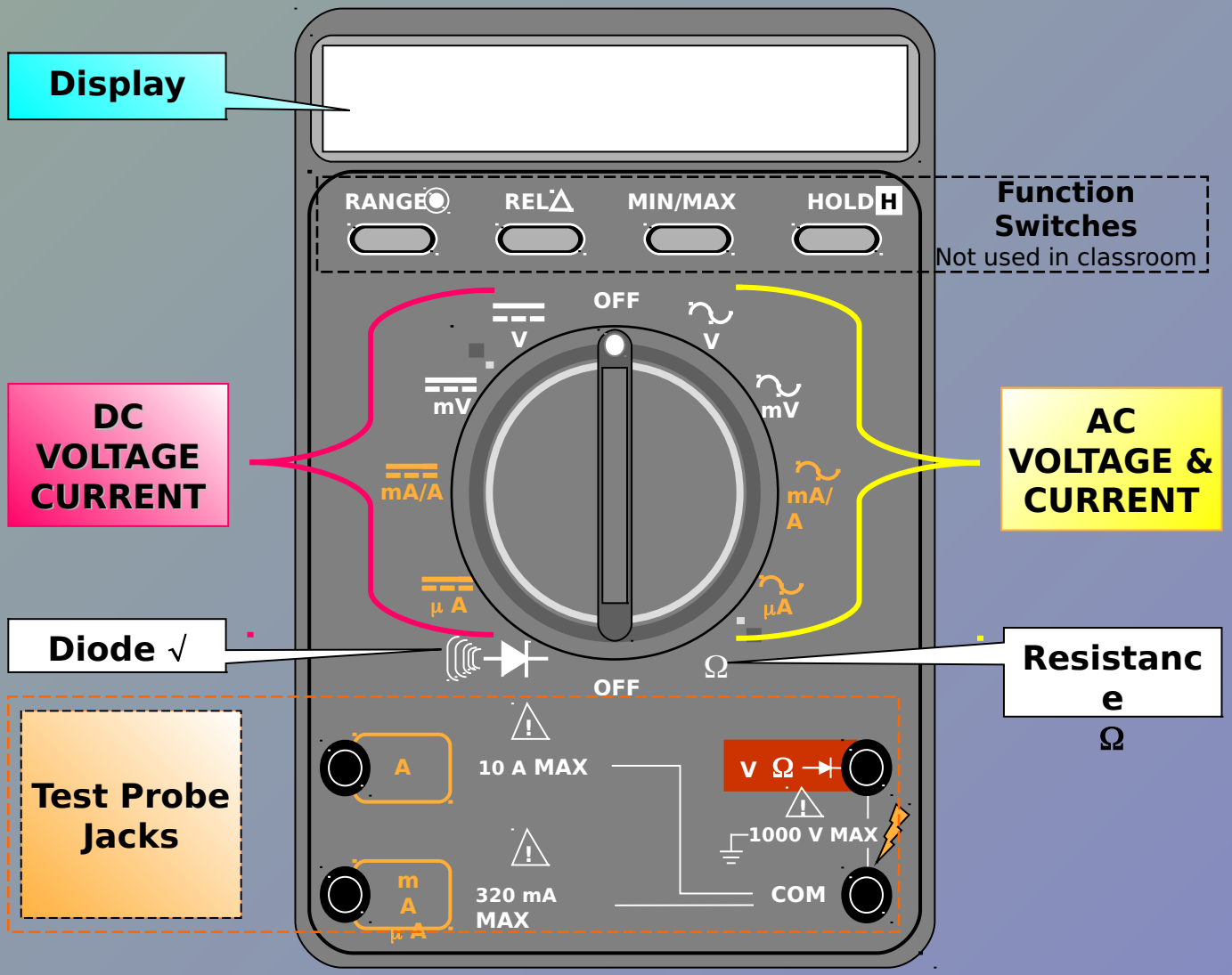
You have probably used some type of meter in the past; probably the speedometer on your automobile.

Electronic technicians also use a meter, called a multi-meter. This Instrument enables the technician to measure units of resistance, voltage and current to diagnose a malfunction.

Functional Areas

# DC: Care & Use Multimeter

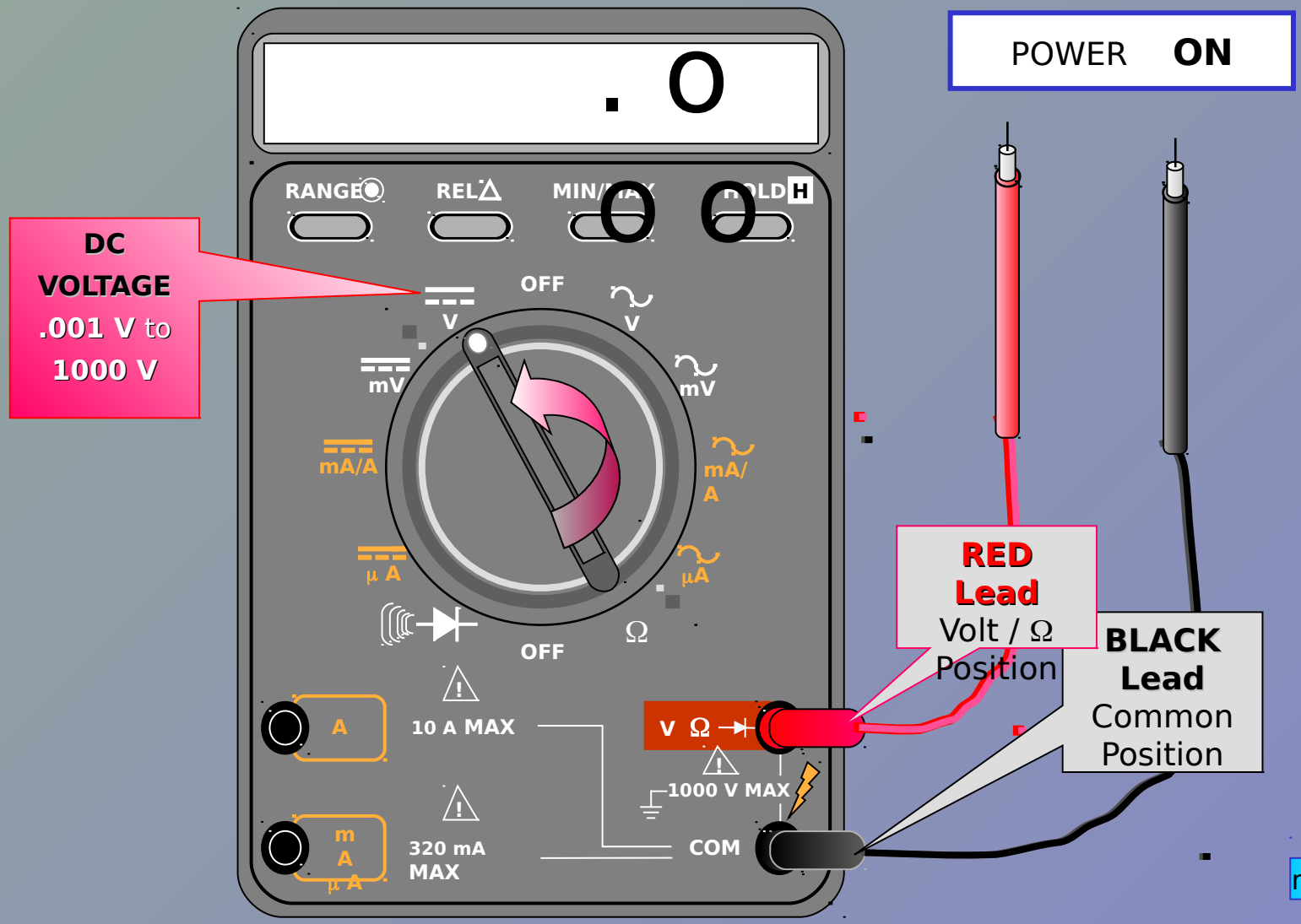
## Functional Areas;




DC Voltage

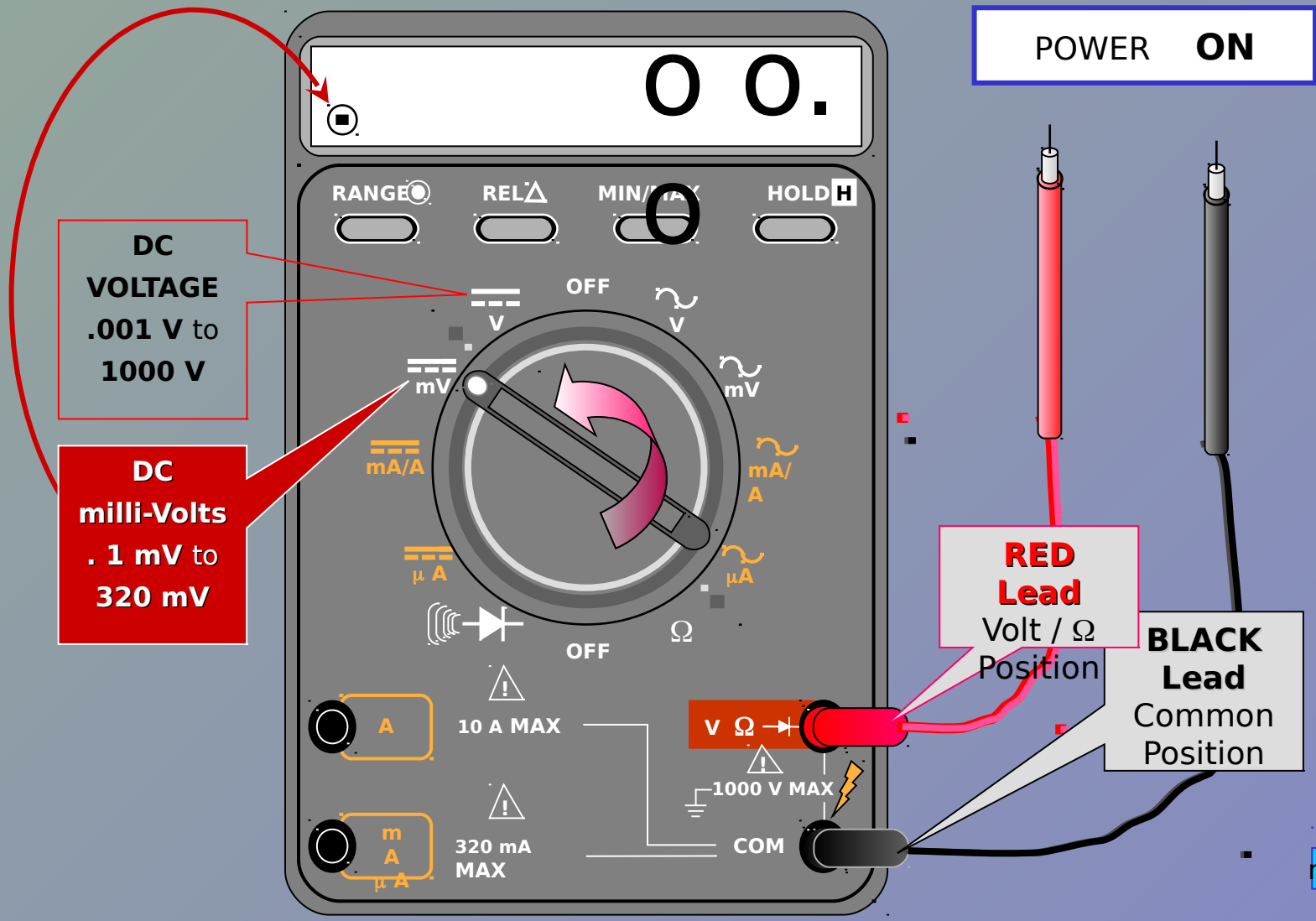
# DC: Care & Use Multimeter

## DC VOLTAGE;



# DC: Care & Use Multimeter

## DC VOLTAGE;



# DC: Care & Use Multimeter

## DC CURRENT; mA/A Position.

POWER **ON**

**DC Milli Amps** to **Amps** **. 01 A** to **10 A** **.01 mA** to **320 mA**

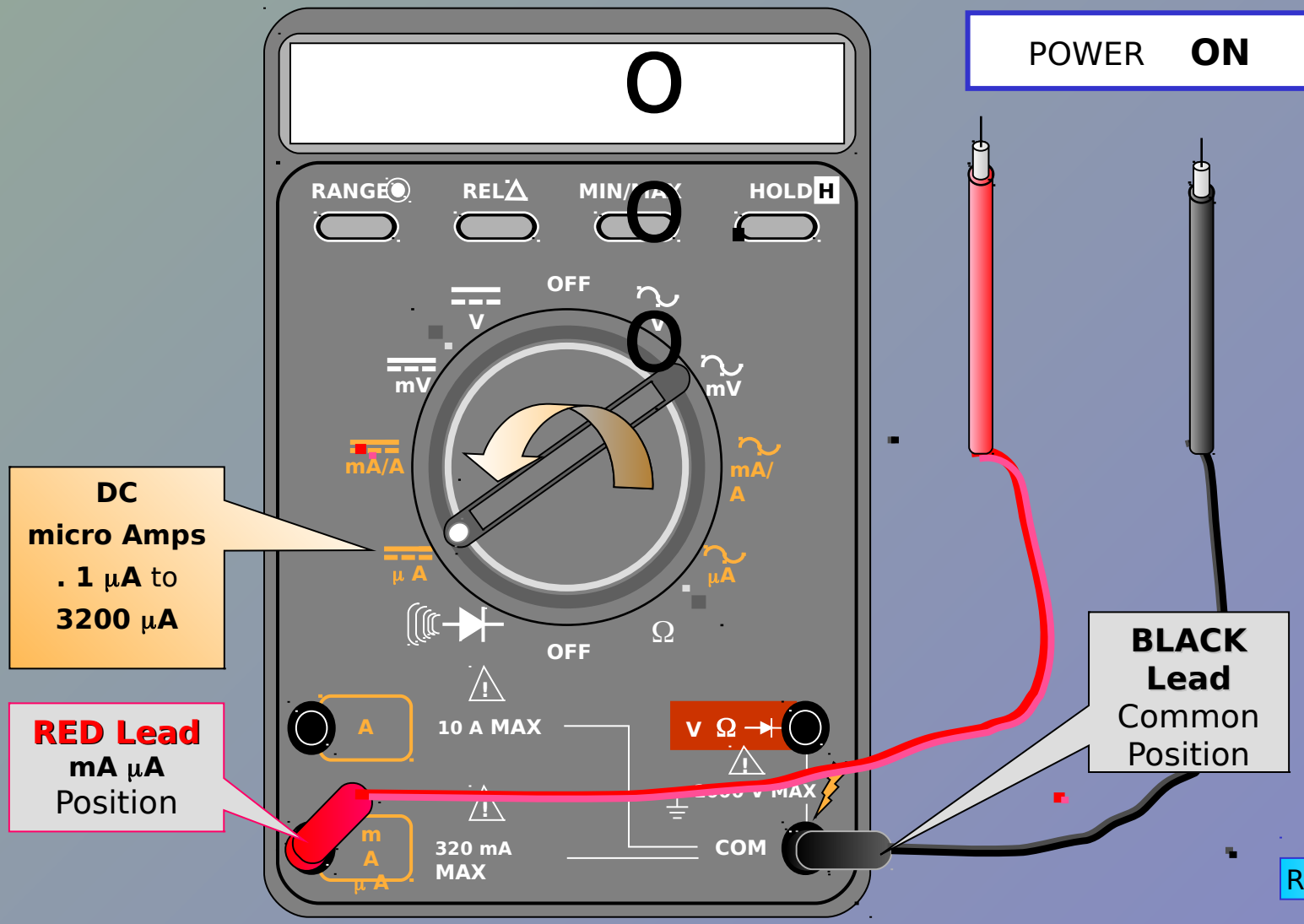
**RED Lead** **10 A MAX** Position

**BLACK Lead** Common Position

micro A/ mA

# DC: Care & Use Multimeter

## DC CURRENT; μA Position.



# DC: Care & Use Multimeter

## DC Resistance; Ω Position.

**0L = ∞ Ω**

POWER **OFF**

Indicator **MΩ** or **KΩ**

**Ω**
**.1 Ω** to
**32 MΩ**

**RED Lead**
**V Ω**
Position

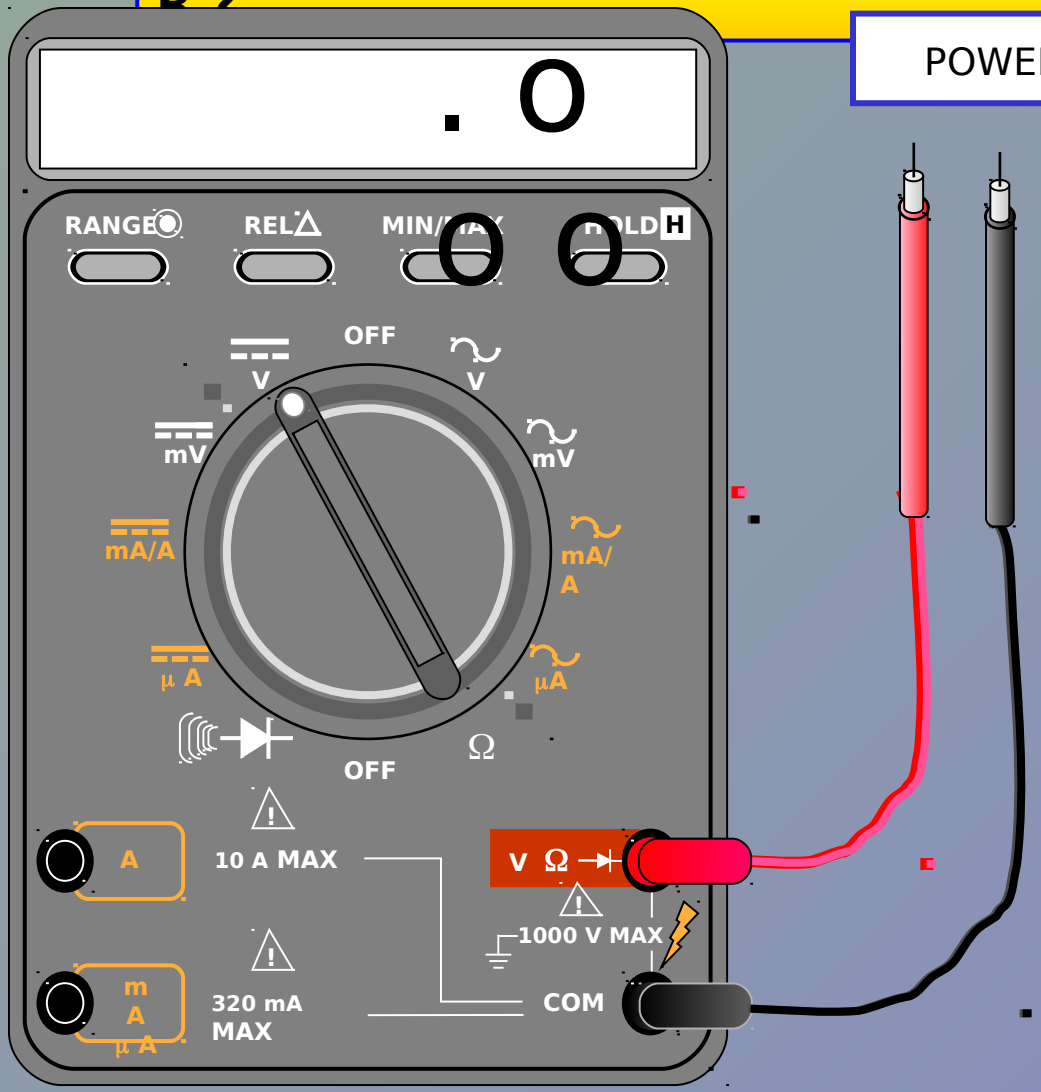
**BLACK Lead**
Common
Position

Challenge

# DC: Care & Use Multimeter

**Challenge; This Meter is set up to measure V, A, R ?**

POWER **ON**




Voltage

Current

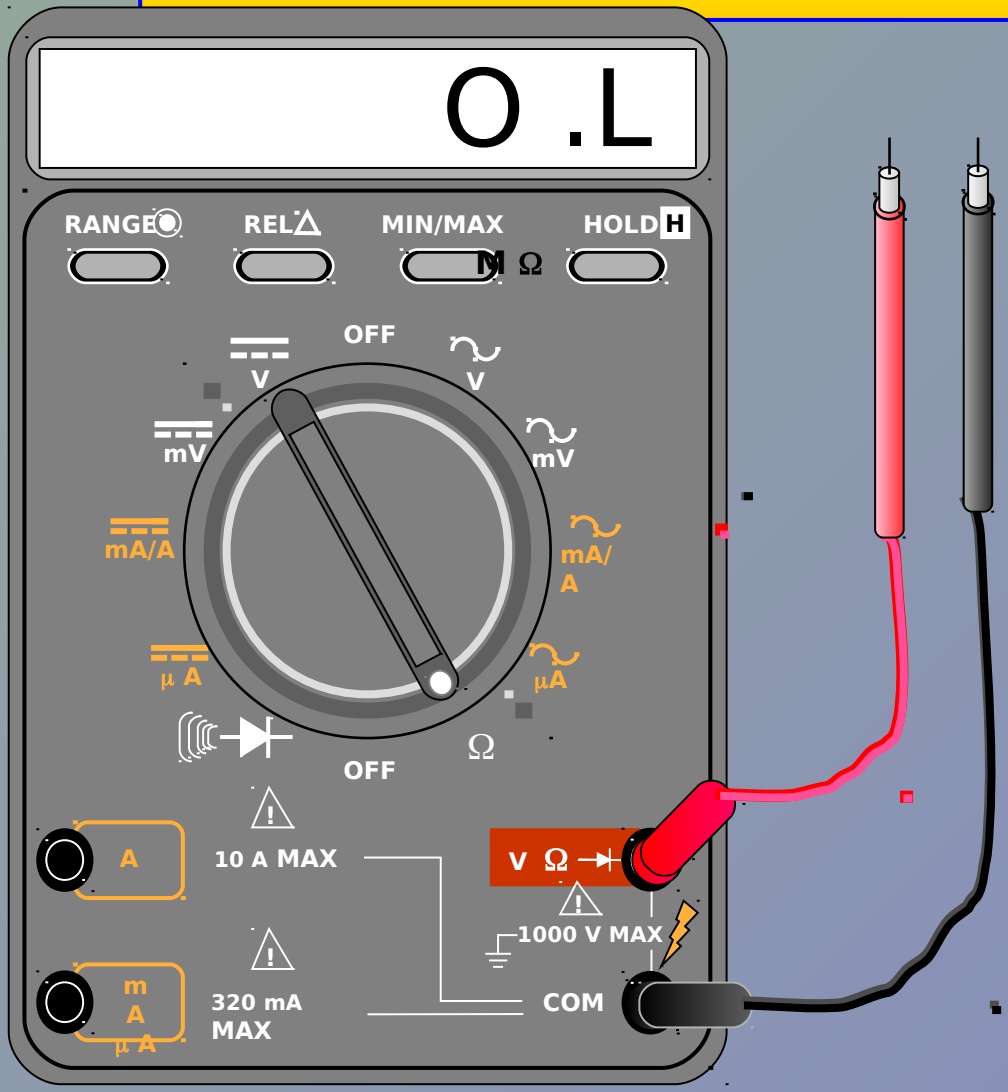
Resistance

Challenge

# DC: Care & Use Multimeter

**Challenge; This Meter is set up to measure V, A, R ?**

POWER **OFF**




Voltage

Current

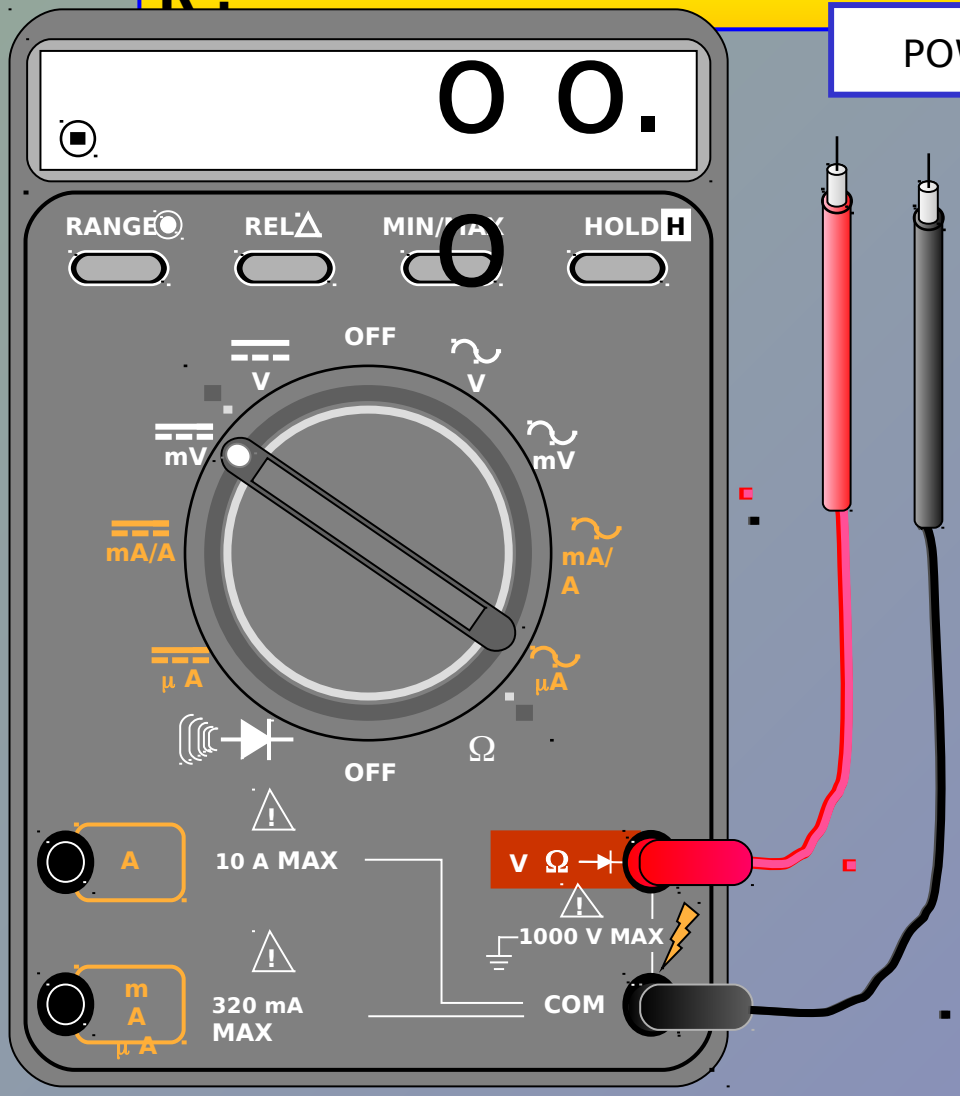
Resistance

Challenge

# DC: Care & Use Multimeter

**Challenge; This Meter is set up to measure V, A, R ?**

POWER **ON**



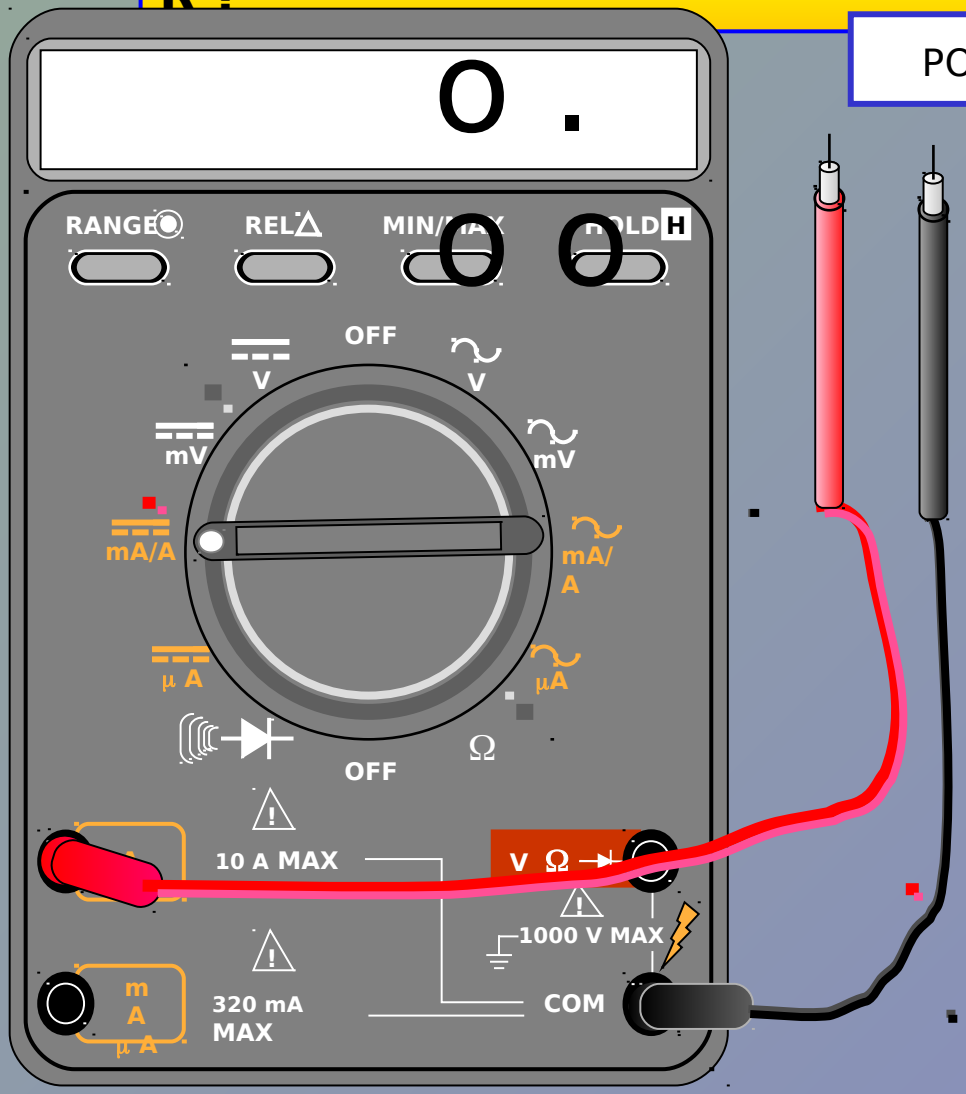

- Voltage
- Current
- Resistance

Challenge

# DC: Care & Use Multimeter

**Challenge; This Meter is set up to measure V, A, R ?**

POWER **ON**



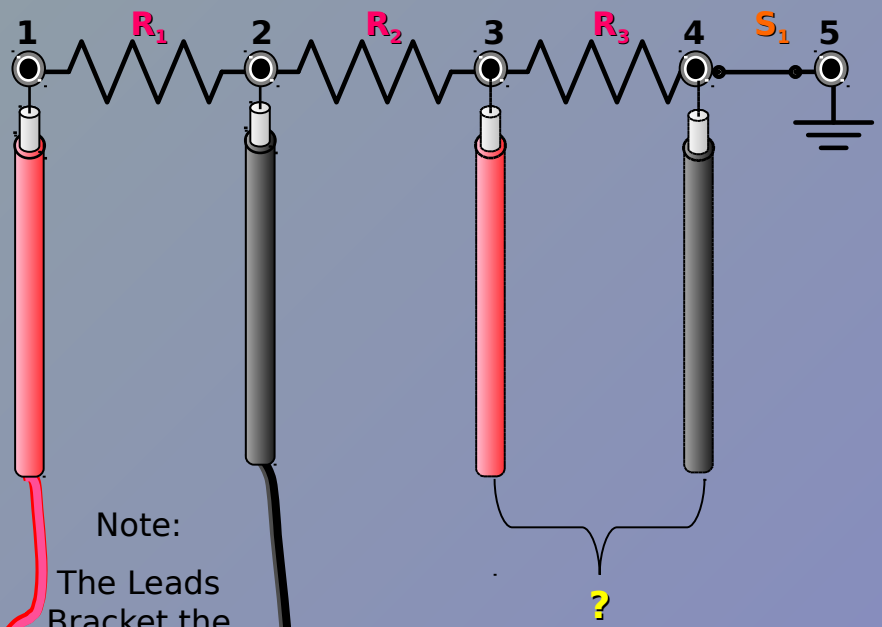

- Voltage
- Current
- Resistance

Measurements **R**

# DC: Care & Use Multimeter

## Taking Measurements; Resistance .

POWER **OFF** **Circuit Isolated**




Note:

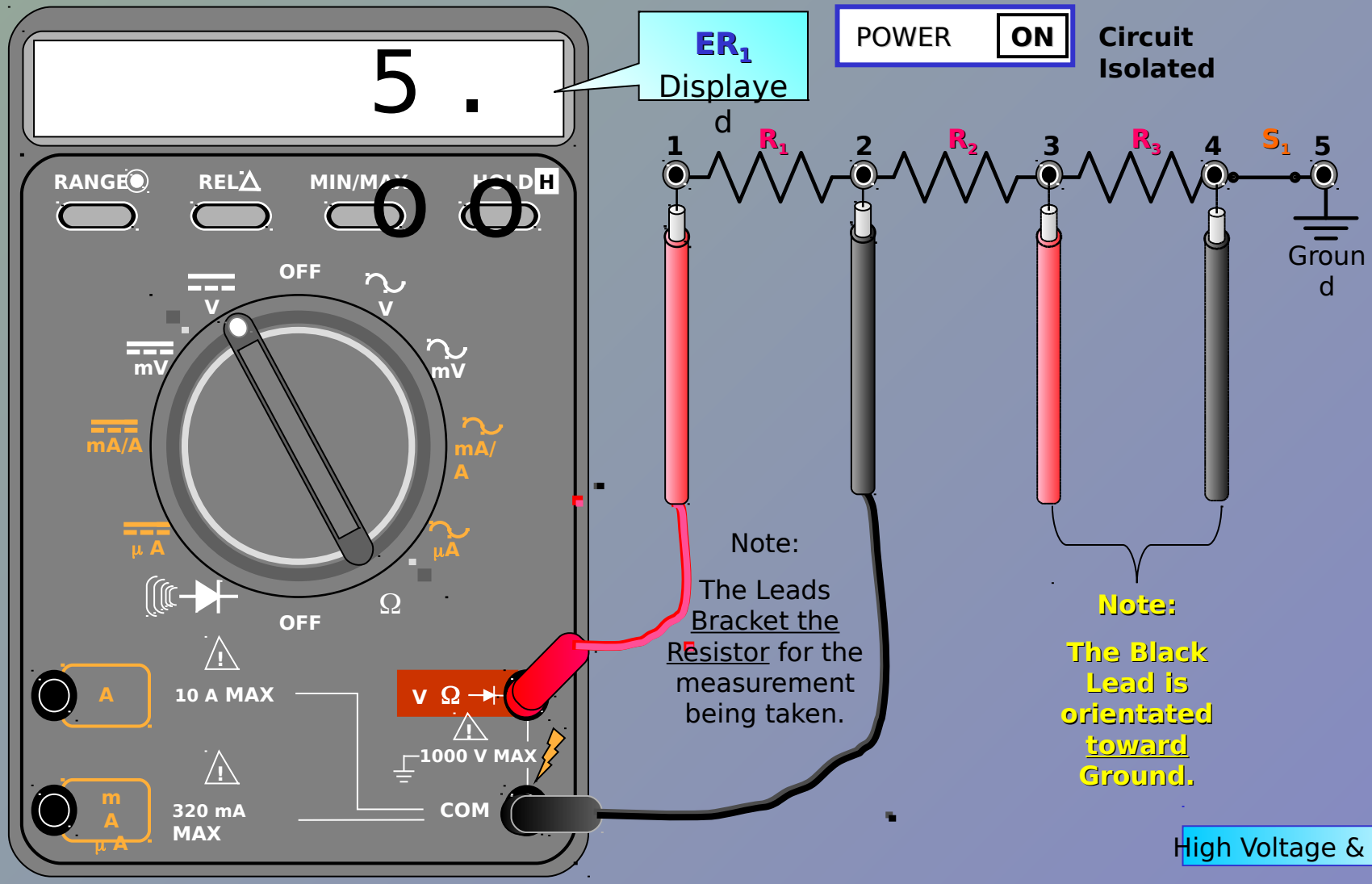
The Leads Bracket the Resistor for the measurement being taken.

Which Resistor Measurement is being taken.

Measurements **V**

# DC: Care & Use Multimeter

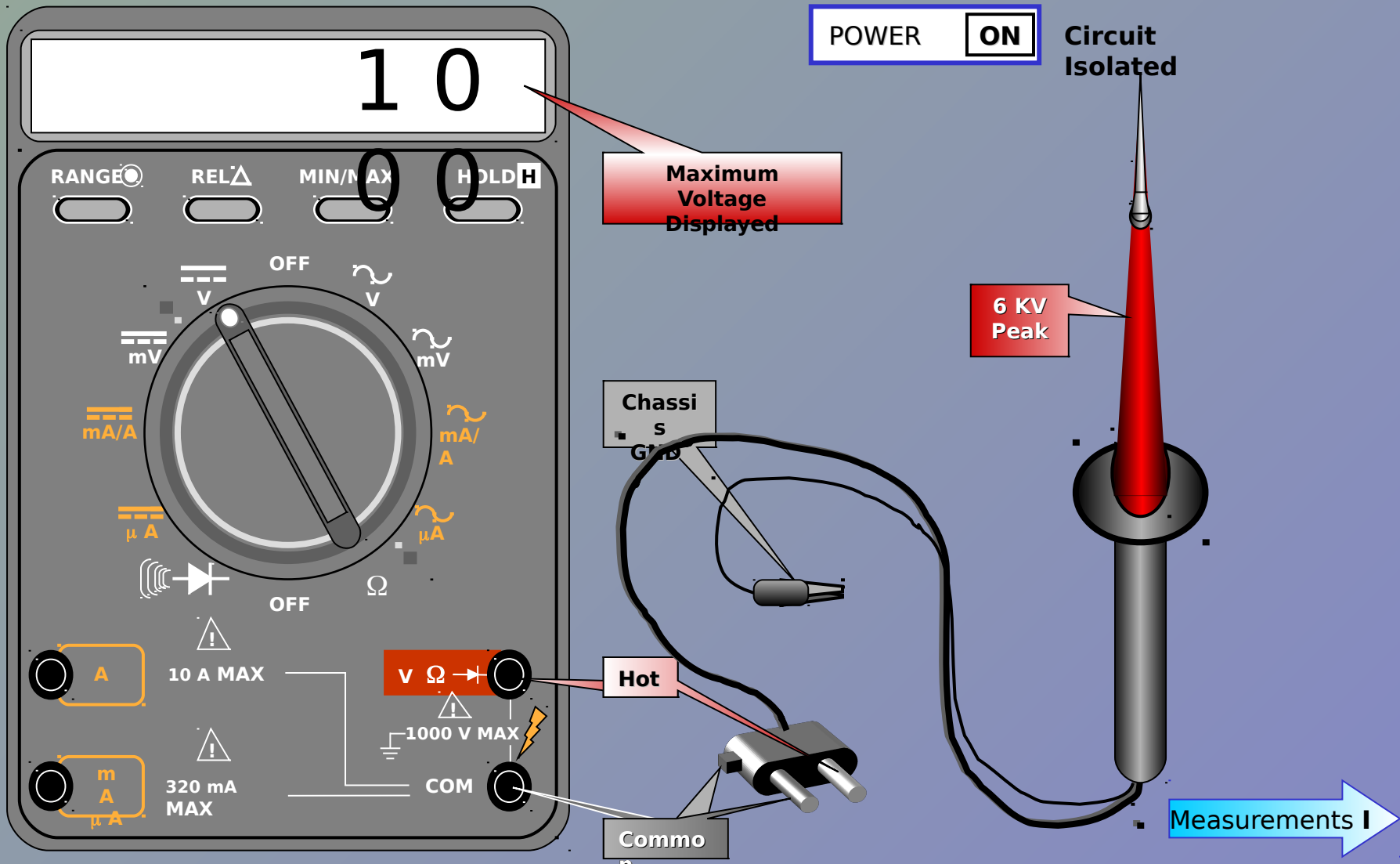
## Taking Measurements; Voltage.




High Voltage & Probe

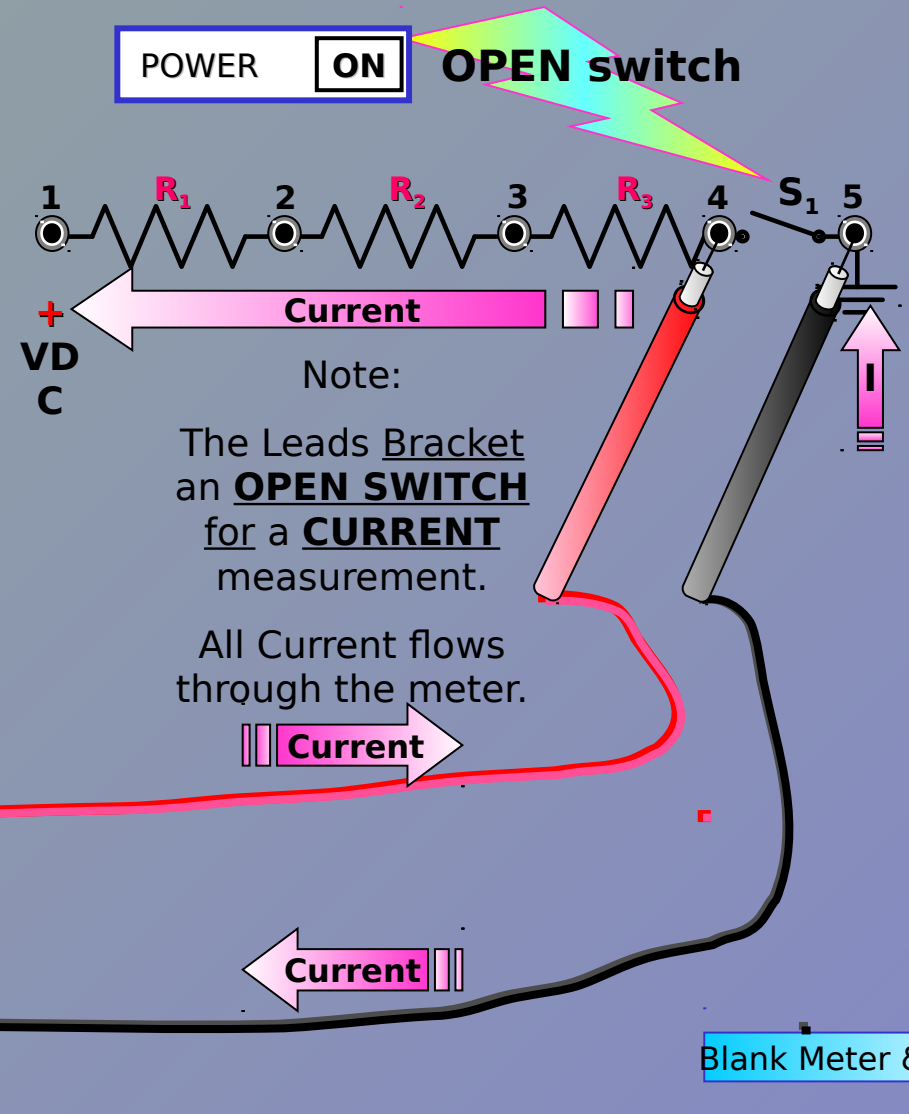
# DC: Care & Use Multimeter

## Taking Measurements; HIGH Voltage & Probe



# DC: Care & Use Multimeter

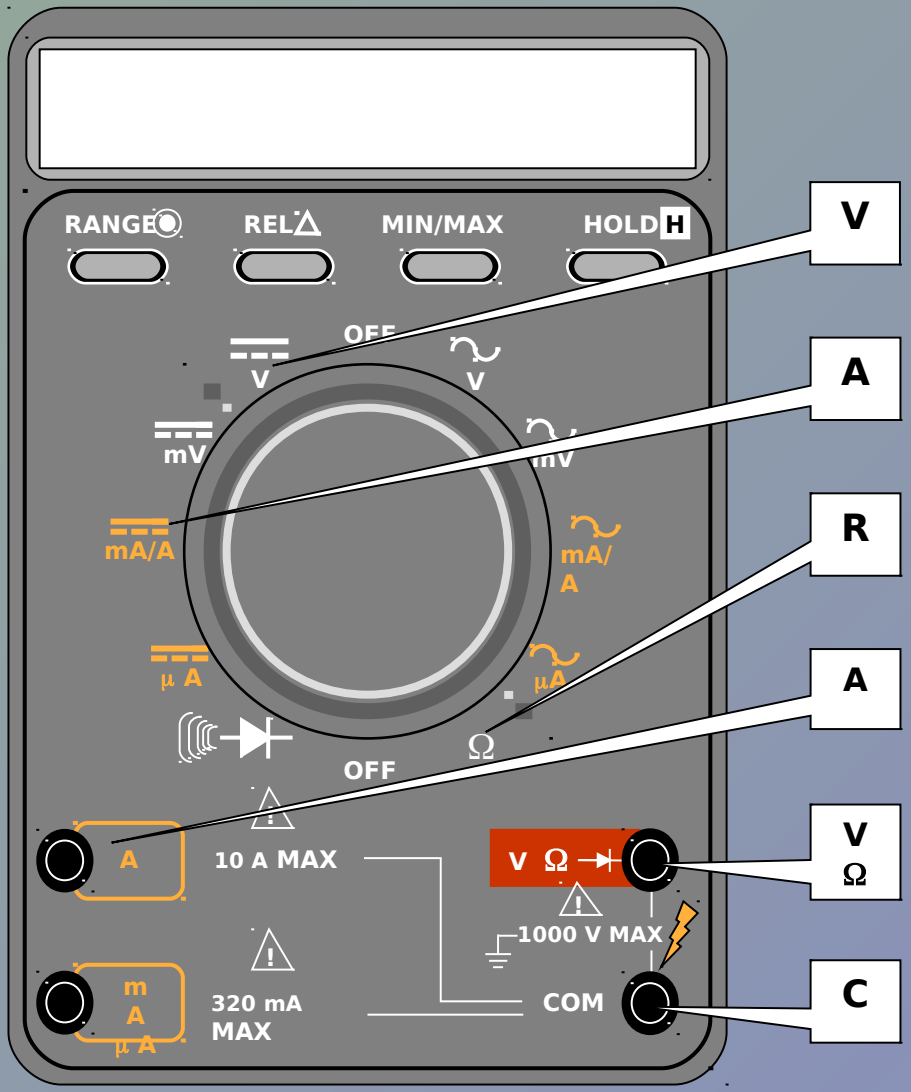
## Taking Measurements; Current.

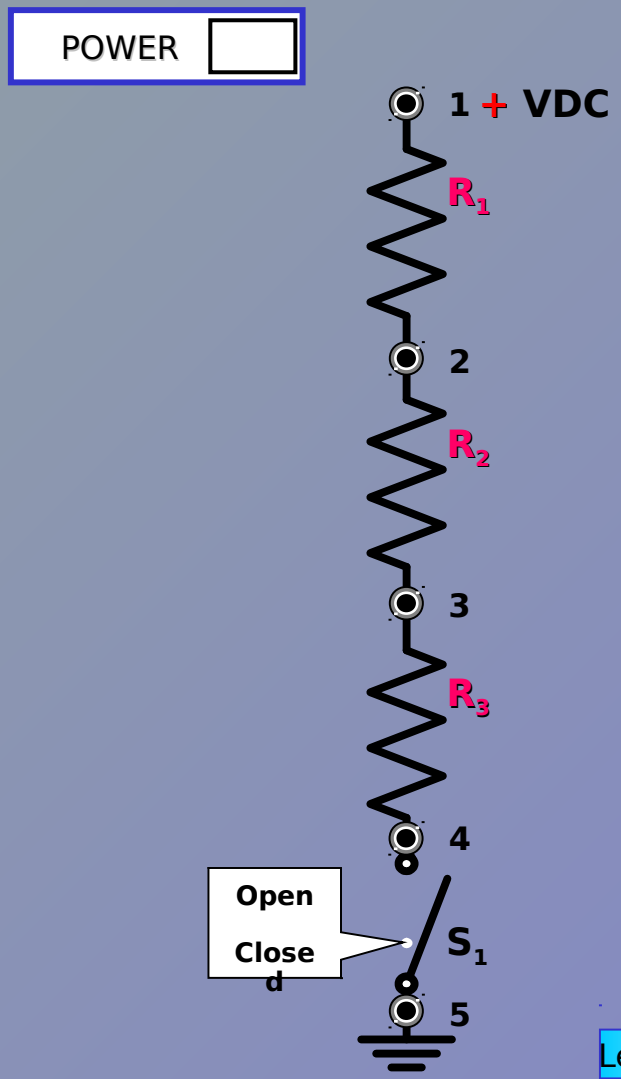



Blank Meter & Ckt

# DC: Care & Use Multimeter

## Taking Measurements;




Lesson Test

# DC: Care & Use Multimeter

## SUMMARY & QUESTIONS:

### LESSON TEST:

| | |
|---|---|
| Time; | 20 Minutes. |
| References; | Without. |
| Standard; | 70% minimum. |
| | 80% for EOD |

Figure 1 & 2

# DC: Digital Multimeter

## Lesson Test Figure 1 & 2:

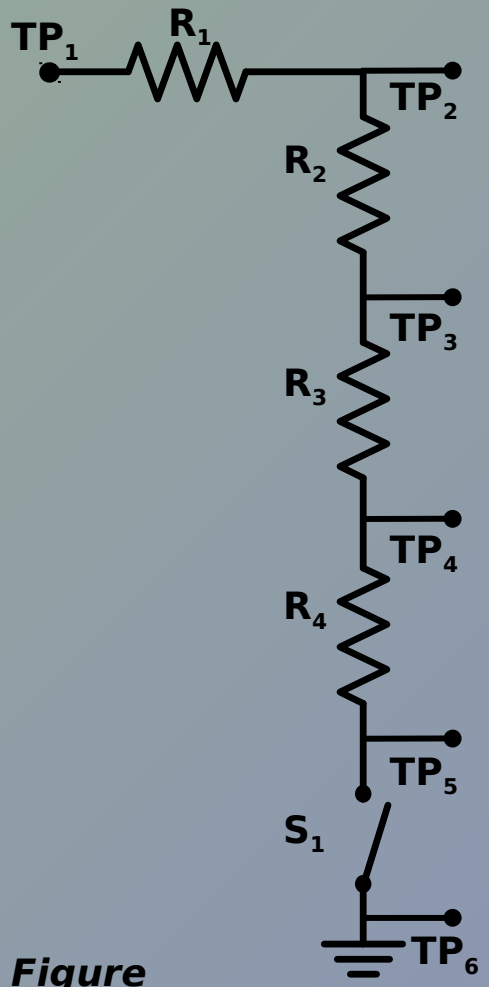



*Figure 1.*

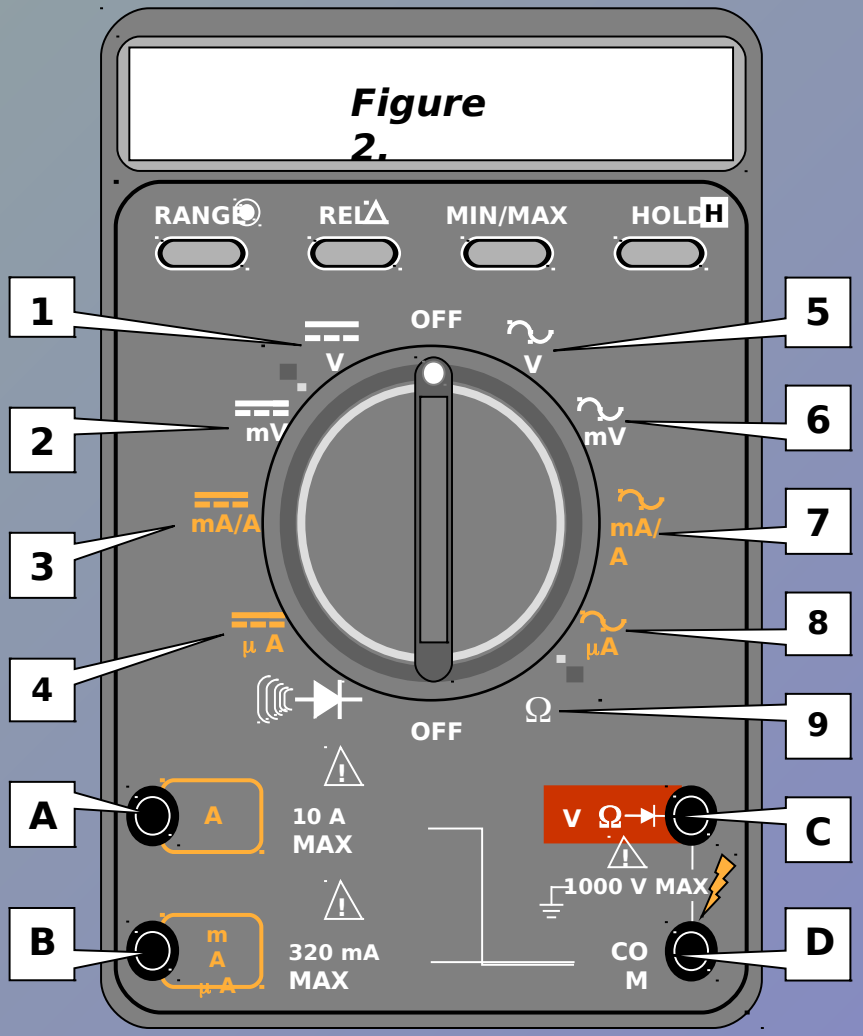



*Figure 2.*